



ASSESSMENT OF THE SOCIO-ECONOMIC CHARACTERISTICS OF SMALL SCALE ONION MARKETERS ON RISK ATTITUDE IN SELECTED LGAs OF SOKOTO STATE, NIGERIA

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ABSTRACT

The study assessed the socio-economic characteristics of small scale onion marketers on risk attitude in selected LGAs of Sokoto state. The study highlights factors determine onion marketers' risk attitude in decision-making. A three - stage sampling technique was employed to select 210 small scale onion marketers for the study, primary data were obtained using a structured questionnaire and interview schedule. While, secondary information was sourced from previous studies, journal, and other official repository. Descriptive statistics was (frequency counts, percentages and means) used to assessed the socio-economic characteristics of the respondents. Tobit regression analysis was used to detemine factors influencing risk attitude of small scale onion marketers. The result shows that majority of the onion marketers had an average age of 46 years and male dominated (85.2%). Half (50.4%) of onion marketers were married, 51.4% had no formal education. Majority (54.7%) had between 6 -10 dependents. More than half of the marketers (58%) engaged in farming as a secondary occupation. The findings suggested that the entire (100%) respondents were registered members of onion marketers association, majority 83.3%, had over one decade experience. Majority of the onion marketers (79.0%) relied on radio as source of information. Also, (66.1%) of the respondents earned between, 501,000 -1,000,000.000 as annual income. Among the factors that determine the risk attitude of small scale onion marketers, the study revealed the significant variables whichinclude, years of experience in small scale onion marketing at $p<0.01$, major occupation at $p<0.1$, cooperative society at $p<0.05$, non-farm activities at $p<0.1$ and the technical efficiency at $p<0.05$. The findings show that small scale onion marketers' exhibited a high risk attitude. Also, factors that had significant impact on the risk attitude of small scale onion marketers' are technical efficiency, allocative efficiency and economic efficiency. The study proffered that extension contact should be more frequent, in order to reduce the tendency of risk aversion level increase amongst small scale farmers. Also, Onion marketers association should put more efforts or priority in orientation of their members in adoption of innovation necessary in reducing risk aversion attitude.

KEY WORDS: Onion, Marketers, Risk, Attitude, Postharvest

INTRODUCTION

Agriculture and its related value chain in Nigeria are the main providers of food and source of income to many rural households, where 70 - 80% of their livelihoods come from crop production, value additions, and livestock management. Opeyemi and Obalola (2017) asserted that agricultural sector is recognized with multiple numbers of risks, which occurs with high frequency, such as detrimental climate conditions course by natural or man made catastrophes to production outcomes. However, Opeyemi and Obalola add that, despite peoples' differences in the way they take judgments, particularly decisions involved risk; still they are often labeled as differences in risk attitude. In fact, Reynaud and Couture cited Opeyemi and Obalola (2017) continue to buttressed the fact that understanding individual risk preferences is a criterion to understand economic behavior.

Onion (*Allium cepa* L.) is recognized globally as one of the major vegetable crops prized not only for its culinary applications, but for its numerous health-promoting properties (Kingsley and Seong-Hoon, 2023). Infact, onions are essential ingredient valued for it flavor, pungency, and culinary versatility (Lawal cited in Grant *et al.*, 2024). Farha *et al.*, (2020) avers that Onion (*Allium cepa* L.) is a very important herbaceous biennial plant grown in over 170 countries of the world. Also, a significant agricultural commodity in Nigeria highly cherished for its culinary flavour and nutritional qualities. Onions serves as a source of micro and macro nutrients with numerous nutraceuticals uses (Shehu *et al.*, 2023). In addition to the nutritional value, onion crops generate income and source of employment opportunities to many rural families (Olabode *et al.* 2024). Postharvest loss of onions like every other perishable product is quite sky-scraping, particularly in developing countries, with inefficient postharvest management systems (Falola *et al.*, 2023). Conversely, Grant *et al.*, (2024) also observed that, onion marketers frequently experience losses that can be as high as 30-50% of their total produce, affecting profitability and contributing to food insecurity to many households.

Godfrey *et al.* (2023) succinctly reported that agricultural marketers performed pivotal roles in assembling agricultural commodities from isolated producing areas to market hubs, which distributed onion products to consumers and other stakeholders in urban or peri-urban areas. Ministry of Foreign Affairs (2021) also reported that, Nigeria is one of the largest producers of onions in West Africa, with multiple variations in seasonality, availability, and affordability of onions. In Nigeria, about fifty percent of more than two million metric tonnes of onion produced annually are lost at the postharvest stage (NBS, 2022). In fact, losses of onions posed formidable challenges in the onion supply chain, impacting local downstream economy and affecting food availability and livelihoods of small scale onion marketers, due to inadequate handling, inadequate storage, and inefficient distribution systems (Shehu *et al.*, 2023). Olaniyi *et al.*,(2021) also asserted that postharvest loss of more than 25% perishable crops in

undeveloped nations, because of pest infestations, spoilage, and inappropriate postharvest management along the value chain. These losses are not only an economic burden, but also a waste of labour, water, land, and other resources used in supply chain. Onion marketers play a crucial role in the onion distribution and their ability to manage postharvest losses directly affects their profitability, farmers' livelihood and availability of onions to consumers (Oyedele *et al.*, 2020). Although various scholars' defined risk various ways for instance, in Olarinde cited in Abdulrazaq *et al.*, (2022) opinions, and risk is uncertainty that affects an individual's welfare which often associated with a lot of misfortunes encountered in onion value adding process.

The risk involves in onion trade is relatively high, due to its perishable nature, likewise loss of value of onion bulb pooled with the lack of storage facilities, sometimes translate the hasty transaction manner marketers were obliged to vend at, to reduce the price of their commodities to minimise potential loss (Olawuyi and Olawuyi, 2015). Falola *et al.*, (2022) asserted that onion trade is largely operates on informal credit, underpinned by relationships of trust, based on close personal networks, also built on reputation and frequent interactions. Olabode *et al.* (2024) also reported that there are wide spread knowledge of price among farmers, marketers and consumers, but there are price instability that render onion to be risk enterprise.

As Oyewole *et al.*, (2020) define risk as acondition in which the results of a decision or course of action may not be easily known, but will probably fall within a known range. Also, Oyewole continue to add that, risk is a situation, where each action leads to one of a set of possible outcome and an outcome occurs with a known probability. Abdulrazaq *et al.*, (2022) avers that variabilities of outcomes are measurable in quantitative manner. Over the years, several earlier studies had been carried out to investigate risk management, postharvest challenges of onion and onion marketers' roles played in supply chain (Olabode *et al.*, 2024). However, this show that not much attempt has been made to assess various socioeconomic characteristics of the onion marketer's attitude towards risk in the study area.

In view of the aforementioned reasons, this research is being tailored towards addressing the following research questions:-

1. What are the socio-economic characteristics of small scale onion marketers in the study area?
2. What are the factors influencing small scale onion marketers' attitude towards the risk associated with onion business in the study area?

Objectives of the Study:

The broad objective of this study assess the Socio-economic Characteristic of Small scale Onion Marketers on Risk Attitude in selected LGAs of Sokoto State, Nigeria

The specific objectives are to:

1. describe the socio-economic characteristics of

Smallscale onion Marketers on risk attitude in the study area;

2. determine the factors influencing small scale onion Marketers attitude towards the risk associated with onion business in the study area

METHODOLOGY

The Study Area

The study was conducted in Sokoto State, Nigeria. Sokoto State was created from the then Northwestern State in 1976 with Sokoto as capital. The city is an Islamic spiritual headquarters in Nigeria and seat of the Caliphate, with the Sultan of Sokoto as the spiritual leader. It has a projected population of 4.2 million with 3.2% expected growth rate (NPC, 2024). Sokoto has twenty three local government areas. With an area or land mass of 25, 973sq.km, the State shared border with Niger republic to the north, Benin republic to the west. Sokoto State is located in the Sahel savannah agro-ecological zone of Nigeria. Coordinates of the state stretches or lies between Latitudes 10° 40'N and 13°55'N and longitudes 3°30'E and 7°06'E (NIMET, 2024). Sokoto is located in the extreme north west of Nigeria, near the confluence of the Sokoto River Rima. The average rainfall is about 550mm per annum. Relative humidity is between 15 – 20 % during the dry season and up to 70 – 75 % during the rainy season. While, the rainy season start from June to October, with noticeable dry season, starting from October to February popularly known as *Harmattan* which quit often comes with dusty wind blowing Sahara dust, over the land Sokoto state has tremendous potential for both cultivation and marketing of onion bulb. Farming is the major cultural occupation of the inhabitants and the crops cultivated include both food and cash crops such as millet, sorghum, rice, groundnut, cotton, cowpea, and cassava. In addition, vegetable cash crops, such as onion, garlic, tomato, as well as carbages, carrot, sweet potato, and hot peppers are also grown in commercial quantities during the dry season under irrigation. The study area has incredible potential for onion cultivation. The bulk of onion production is from the dry season cropping system, particularly under *Fadama* irrigation methods in the study area. Due to availability of abundant irrigated farmland as compared to other areas in the state (Opeyemi & Babalola, 2017).

Sampling procedure and sample size

The population sample for this research was obtained from the list of registered onion marketers provided by NOPPMAN in Sokoto state. A three-stage sampling procedure was used for this study. The first stage involved a purposive selection of three (3) out of 23 LGAs of Sokoto State, based on high concentration of Onion Marketers and being amongst the major onion production areas, namely: Wurno, Kware, and Sokoto-North LGAs. The research area was purposively chosen from one of the Sokoto State ADP zone (Northern Zone). In the second stage, a stratified random selection was carried out on

basis of convenience and appropriate strata were used based on homogeneity identified amongst the onion marketers, such as cultural orientation, overall outlook of onion supply chain and other socio-economic characteristics. The third stage involved a simple random selection of 20% of each stratified small scale onion marketers by the use of random digits (numbers). This was done in order to reduce the cost of data collection. The breakdown of sample selection showed that, 103 onion marketers from Wurno LGA, 97 Onion marketers from Kware LGA, and 100 onion marketers from Sokoto north LGA in Sokoto State. Hence, the sample size for the study was two hundred and ten (210) small scale Onion Marketers (Table, 1).

Table .1: Sampling Procedure and Sample Size

State	LGAs	Number of registered SSOM	Stratified Smallscale Onion marketers	Selected Onion marketers (20%)
	Kware	2,012	334	67
Sokoto	Sokoto	2,655	334	70
	North Wurno	3,963	364	73
Total	3	8,630	1,045	210

construction (2025)

Method of Data Collection:

The primary data for this study were obtained from structured questionnaire with the assistance of trained enumerators. While, secondary information was sourced from previous studies, journal, and other official repositories.

Method of Data Analysis:

The analytical tools used to achieve the objectives of the study were descriptive statistics (frequency count, percentage, and arithmetic Mean) and Tobit analysis.

Model Specification

The Tobit model used for the analysis was specified as follows:

$$K_i = \lambda_0 + \lambda_1 V_{1i} + \lambda_2 V_{2i} + \lambda_3 V_{3i} + \lambda_4 V_{4i} + \lambda_5 V_{5i} + \dots + \lambda_{15} V_{15i} \quad (2)$$

Where;

- K_i = Risk aversion level (Range number);
- V_{1i} = Age of onion marketers (years)
- V_{2i} = Level of education (years spent in school)
- V_{3i} = Years of experience (years)
- V_{4i} = Household size (number);
- V_{5i} = Secondary occupation (Point scale);

- V6i = Sex (1 = Male; 0 = Female);
- V7i = Marital status (1 = Married; 0 = otherwise)
- V8i = cooperative society membership (1= Member,0 = Non-Member)
- V9i = Non-farm activities (Dummy variable);
- V10i = Access to credit (Dummy variable);
- V11i = Technical efficiency (Range between 0 - 1);
- V12i = Allocative efficiency (Range between 1 - 0);
- V13i = Economic efficiency (Range between 0 - 0); and
- V14i = Location (Dummy variable).

Table.2: Distributions of Socio-Economic Characteristics of small Scale onion marketers (n=210)

Variable	Percentage	Mean	Frequency
Age			
≤ 40			3
			1.4
41-50		163	77.6
≥51		44	20.9
Sex			
Male			
		179	85.2
Female			
		31	14.7
Marital Status			
Single			
		61	29.0
Married			
		106	50.4
Divorce			
		26	12.3
Widowed			
		17	8.0
Level of Education			
Non Formal			
		108	51.4
Primary			
		32	15.2
Secondary			
		59	28.0
Tertiary			
		11	5.2
Household size			
0-5			
		20	9.5
6-10			
		115	54.7
11-15			
		68	32.3
>16			
		7	3.3
Secondary Occupation			
Non			
		20	9.5
Farming			
		122	58.0
Artisan			
		24	11.4
Others			
		44	20.9
Membership of Association			

RESULT AND DISCUSSION

Table.2: Socioeconomic Characteristics of Smale scale Onion marketers

Table.2: reveals that majority of the onion marketers' had an average age of 46 years and male dominated (85.2%), this implies that majority of onion marketer are dominated by males, and more than half (50.4%) of onion marketers were married, 51.4% had no formal education. By implication, these probably indicates that there were low levels of literacy among the respondents; the result was in agreement with the findings of Obayelu *et al.*, (2021) who lamented that, there were high cases of postharvest loss found among farmers with no formal education. Majority (54.7%) had between 6-10 households. Thus, the onion marketers could have household members who could serve as family labor at their disposal. More than half of respondents (58%) engaged in farming as secondary occupation. This suggests that the onion marketer has a major means of catering for the family. The result illustrated that the entire (100%) respondents were registered members of NOPPMAN. This indicates their chances to get access to credit facilities. Majority (83.3%) of respondents have had more than 10 years experience in onion enterprise. This implies that onion marketers in the study area have considerable experience and well-informed to embrace risk with confidence. Majority of the onion marketers (79.0%) used radio as source of their information; this implies that they were knowledgeable and abreast with new innovation in agribusiness, 51.4% of the respondents sourced their capital from personal savings and 85.7% of marketers claimed sole ownership of their onion business. Only 14.2% had joint ownership. This implied that they are risk takers who were not afraid to take the bull by the horn. 66.1% of the respondents earned between, 501,000 to 1,000,000.000 as their annual income.

yes			
Years of Experience	210	100	
≥10			
11-20	25	11.9	
≥21	175	83.3	31
Source of Information	10	4.7	
Friends and colleagues	40	19.0	
Radio	166	79.0	
Social media		4	1.9
Source of Capital			
Personal savings			
Friends and relatives	108	51.4	
Cooperative/thrift society	10	4.7	
Micro-finance banks	37	17.6	
Ownership			
sole	55	26.1	
Joint	180	85.7	
Annual Income			
≤500,000	30	14.2	
501,000 - 1,000,000	40	19.0	
≥1,000,000	139	66.1	750,000
	31	14.7	

Source: Field survey data, 2025

Table.3: Factors influencing Risk Attitude of Small scale Onion Marketers

The inferential statistics was used to determine the socio-economic variables influencing risk attitude of small scale onion marketers in the study area. Also, to determine factors influencing risk aversion among small scale onion marketers, Tobit model was analytically employed with risk aversion levels as a dependent variable and fourteen (14) Independent variables: Age, Education, Experience, Householdsize, Secondary Occupation, Sex, Marital status, Cooperative society membership, Non-farm activities, Access to credit, Technical efficiency, Allocative efficiency, Economic efficiency and Location were used. The adopted Tobit model mixed with

properties of multiple regressions analysis and Probit were used to captures the intrinsic risk decision of the small scale onion marketers (whether or not the marketers are attitudinally modest or highly averse to risk). More importantly, it does simultaneously consider the degree or extent of risk aversion (Abdulrazaq *et al.*, 2022).The research suggested that the dual purpose, efficiency, and fecundity of the Tobit Model necessitate its choice for this aspect of the analysis.

Table.3: Factors influencing Risk Attitude of Small scale Onion Marketers

Variable	Coefficient	
t-ratio		
Constant	-1.5747	-1.27
Age(Year)	0.0047	0.28
Education(Level)	0.0865	0.94
Experience(Year)	1.1515***	45.82
Householdsize(Number)	-0.0134	-0.59
Secondary occupation	-0.1583*	1.87
Sex	-0.1583	-0.27
Maritalstatus	-0.1583	-0.27
Cooperativesociety	0.5283**	2.52
Non-farmactivities	-0.4108*	-1.76
Accesstocredit	0.3022	1.12
Technicalefficiency	-0.0199**	-2.63
Allocativeefficiency	0.0157	0.34
Economicfficiency	-0.0007	-0.18
Location	-	-
Loglikelihoodfunction	970.1347	
Sigma	1.1367	

Note: *, **and ***indicate statistical significant at 1%, 5% and 10% levels of significant respectively.

CONCLUSION

This study had empirically analysed the econometric estimations of attitude of onion marketers' towards risk in onion supply chain of selected LGAs of Sokoto State. The following conclusions were generated from the findings of the study. It was revealed that small scale onion marketers exhibited a high risk attitude. Also, some of the exogenous (technical efficiency, allocative efficiency and economic efficiency) variables had shown a significant impacts illustrative to risk averse attitude.

RECOMMENDATIONS

The following recommendations were generated from the findings of this study.

- i. Knowledge concerning the risk attitude of onion marketers should be considered as guiding principles in formulation and implementation of insurance scheme for agricultural development

policies.

- ii Nigerian Agricultural Insurance Cooperation (NAIC) should provide functional programmes to cater for the needs of small scale onion marketers
- iii Effective extension delivery system should frequently tailored toward reducing the tendency of risk aversion level increases amongst small scale onion marketers
- iv Onion marketers association should put more effort and give priority to orientation of their members in adoption of innovation necessary in reducing risk aversion attitude

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